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REMARKS

Applicants appreciate the courtesies extended to applicants' representative during the interview of June 1, 1998.

Figs. 15a and 15b have been labeled as "prior art".

Claims 1-4 stand rejected under 35 USC §112, second paragraph.

Claims 1 and 3 have been amended to overcome the 35 USC §112, second paragraph rejection.

Claims 1-3 stand rejected under 35 USC §103 as being unpatentable over US patent 5,385,291 (Latta) and the conventional art disclosed in the subject application.

Claims 1, 2, and 4 stand rejected under 35 USC §103(a) as being unpatentable over U.S. patent 5,217,922 (Akasaki et al.) and the conventional art shown in the subject application. These rejections are respectfully traversed in view of the present amendments and the following remarks.

In Latta, the solder ball (14) shown in Figs. 1 and 2 has a flat top because it is in a state of being attached to an ICs (10) or a PCB (19) or in the process of attachment to the same, and therefore the solder ball (14) does not have a flat top prior to its attachment to the ICs (10) and PCB (19). Similarly, Akasaki et al. discloses solder balls which have a flat surface prior to the attachment to the devices.

In contrast as recited in amended claim 1, in the present invention, the top of the solder bumps is free, flat and leveled. Such flat top of the solder bumps minimizes the coplanarity of the solder bumps and assures joining of the solder bumps to corresponding pads of a mating board.

Additionally, note that as recited in amended claim 1, the circuit board includes a substrate and solder bumps disposed on the


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joining surface of the substrate such that the solder bumps have a top which are flat before being connected to the mating board.

However, both Latta and Akasaki et al. show flat solder bumps after they have been connected to the connecting device.

New claim 12 recites that the solder bumps have tops which are unconnected. In view of the above amendments and remarks, applicants' submits that claims 1-4 and 12 are patentable over Latta or Akaraki.

Respectfully submitted,



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Johnny A. Kumar  
Reg. No. 34,649

FOLEY & LARDNER  
Suite 500  
3000 K Street, N.W.  
Washington, DC 20007-5109  
(202) 672-5300